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RESEARCH ARTICLE

The kitchen in urban dwellings in Barcelona, 1920–1950: Out of step with modern architecture

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Abstract
Changes in spaces for cooking and eating are fundamental to modern architecture. Proposals and studies conducted in America from the 19th century and in Europe mainly from the 1920s have caused architectural debates on the nature of the kitchen space, i.e., to achieve either spaces that are organized and efficient or spaces for working and living. Modern architecture has transformed the kitchen and determined its appearance throughout the 20th century. The intensity of this transformation has depended on social, technical, and architectural contexts. In this study, we focus on how modern architectural approaches influenced dwellings in Barcelona, Spain between the 1920s and the 1950s. The study demonstrates that changes did not occur regularly and were limited to the incorporation of certain services or technological improvements. During this period, cooking and eating spaces were not considered in depth and were treated as areas of secondary importance within dwellings. Changes only became significant from the 1950s onward, when economic improvements, technological innovations, the housing problem, and the gradual arrival of Western cultural references changed the values of these spaces.
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1. Introduction

Residential buildings constructed to house the growing population associated with industrialization are key elements in the formation of contemporary cities. The dwellings in these buildings and their spaces and functions must be classified. Each dwelling must meet the various needs of everyday life by defining the spaces and their interrelations. The discipline of architecture has gradually assumed responsibility, sometimes in a limited way, for the arrangement of the main living areas, such as spaces for

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cooking and eating, sleeping and relaxing, and personal hygiene. In this context, the kitchen and dining room that had been central and versatile in traditional houses gradually became defined specialized spaces with resources, services, and amenities that shaped them. These spaces had to be systematized and situated within a standard architectural logic on the basis of limited surface areas.

An analysis of the transformation and evolution of cooking and eating spaces provides key information that helps us to understand a considerable part of domestic culture. If we consider these spaces within dwellings, the analysis can go beyond the form aspect. This analysis can reveal some of the values associated with food and cooking depending on the economic capacities of families and the extent to which the continuation of domestic services affects them. Furthermore, the effects of the values given to everyday tasks within dwellings and the relation between spaces and gender roles on the interest in and the evolution of these spaces can be identified. The concern for efficiency and good organization of these spaces and their relation within dwellings can also be illustrated. In urban dwellings, these considerations are marked by the impact of technology, both in terms of dependency on utility networks and kitchen equipment.

Changes in the spaces for cooking and eating were central to modern architecture. In fact, modern architecture proposals marked and determined the appearance of these spaces throughout the 20th century. These proposals were based on publications and studies conducted at the end of the 19th century in the United States, which reached the environments of European modern architecture at the beginning of the 20th century (Clarisse, 2004; Eleb, 1995; Giedion, 1969; Lupton, 1992; Spechtenhauser, 2006). The ideas of Catherine Beecher[1] and Christine Frederick[2] were considered as the origin of the organization and efficiency of these spaces in a society, such as that of America, where no domestic service occurred. These ideas focused on two main characteristics, namely, organized, efficient spaces and spaces for working and living (in which the kitchen is also a place for eating). Studies were undertaken from the perspective of those who use these spaces.

Some of the proposals arrived directly in the circles of the European avant-garde or were complemented by other studies close to Taylorism, such as those by Lilian Gilberth.[3] The proposals were assimilated with different readings and interpretations. First, they formed the basis of what is called the laboratory kitchen, which is a space that is measured and fully equipped according to the rationality of work and ergonomic criteria, an important example of which is the Frankfurt kitchen by Margarete Schütte-Lihotzky. Despite the notable role of Shütte-Lihotzky, in this interpretation, the kitchen is no longer a space designed for women but one assigned to them to recognize the value of their work within a home. Second, the proposals served as the basis for interpreting the kitchen as a living space, which had been a central argument in the evolution of kitchens from the 1960s. Third, the proposals established the basis of one of the key arguments in the organization of modern housing, that is, rationality within dwellings. The kitchen–dining room relationship is one of the main arguments behind functional organization.

A key study to understand the changes and new proposals that emerged in avant-garde architecture is that of Catherine Clarisse (2004), who conducted an exhaustive analysis of cases, presented models, and continuities in examining the evolution of these spaces in the European context. She traced the line of evolution to understand the contributions and limitations of avant-garde architecture and how they affected European architectural culture during the 20th century. Her analysis helps us to compare the situation with Barcelona and understand the differences from the reality in this city. Clarisse considered that changes in these spaces occurred in three phases. First, from the 1920s, space was lost to gain time, which led to a small kitchen interpreted as a laboratory. Second, from 1950, the kitchen space had disappeared because service networks enabled its integration into the living room; therefore, the kitchen space was minimized. Finally, the minimal kitchen was set aside and the kitchen became a space for living.

Our objective was to study the spaces for cooking and eating in dwellings in Barcelona from the 1920s to the 1950s. The aim was to determine whether connections between Clarisse's statements on European modern architecture and the reality of urban dwellings in Barcelona existed in the specification and definition of these spaces. We examined whether the principles of good organization and rationalization of work were integrated into the kitchen space, whether cooking and eating spaces were truly analyzed and debated in architecture, and how they were influenced by the international architectural debate. We also assessed the impact of technology in terms of service networks and appliances, which facilitate and reduce everyday tasks and lead to changes in habits.

2. Documentary sources

We used several analysis levels to study the kitchen space, considering that this area varies depending on dwellings. The definition, evolution, and amenities of the kitchen are associated with the category of a house (whether it has domestic servants), the availability of service networks and general services in the neighborhood, access to certain provisions, and the proximity of markets. Consequently, we differentiated the kitchen space by social level because it may determine one path or another in the evolution of kitchen and eating spaces within a dwelling. First, we analyzed singular dwellings of the wealthy, namely, buildings that were either detached or residential buildings where the owner occupied the main floor, the ground floor, and sometimes also a basement and a first floor. These

[1] Author of numerous publications, one of which exerted a particular impact, namely, *A Treatise on Domestic Economy for the Use of Young Ladies at Home and at School* (1842).

[2] *The New Housekeeping: Efficiency Studies in Home Management* (1913) by Christine Frederick was translated into German in 1921 by Irene Witte and exerted a considerable influence on architects. *Scientific Management in the Home* (1919) was translated in 1922.

[3] Lillian Gilbreth (1878–1972), a psychologist, and Frank Gilbreth (1868–1924), a student of Taylor, studied the motions of work with the use of a camera. The book *Cheaper by the Dozen* (year), by their sons Ernestine and Frank Gilbreth, describes their daily life and how it was influenced by their mother's studies.

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dwellings had a large available surface area and domestic servants. Second, we studied middle-class dwellings in apartment buildings with sufficient surface area but almost always with only one floor. These dwellings had a certain amount of available space but within a standard, limited building. Finally, we studied working-class dwellings with small surface areas and a wide range of functions.

We analyzed cases prior to 1920, between the 1920s and 1930s, and between the 1940s and 1950s to establish changes and continuities in these types of dwellings.

2.1. Dwellings built prior to the 1920s

We studied two of the main actions that had the strongest effects on the creation of dwellings and occurred from the 1840s onward. Barcelona was still a city between walls, where some land that had been gained from expropriation of church property or from transforming heritage or industrial sites into residential areas was developed (Hereu et al., 2013). The first action began in 1840 and was the creation of the Ponent neighborhood on land that had been used for manufacturing. We analyzed 32 building permit records generated between 1846 and 1867. The second action was the establishment of the neighborhood of Palau Reial Menor, which was associated with the process of replacing the former Palau Reial. This area was developed from 1849 as a wealthy neighborhood. In this case, we studied 22 building permit records between 1857 and 1860.

From 1860, two urban realities, namely, the new city emerging in the Eixample and the continuity of the existing city, had existed side by side. In the existing city, some major operations to create new dwellings were still underway, as well as other one-off developments. We specifically studied the residential buildings constructed on Carrer Pintor Fortuny and Carrer Doctor Dou, which were developed from 1872 (19 buildings were constructed between 1872 and 1881), and the buildings around the Born market (24 records). The real construction of the Eixample also began during this period. We analyzed the working-class neighborhood of Sant Antoni (25 building permit records generated between 1865 and 1915) and the wealthy neighborhood of Sant Pere (29 building permit records created between 1872 and 1911), as representative zones of the new urban area that reflect two social levels.

2.2. Dwellings built in the 1920s and 1930s

The Eixample extended into more peripheral zones during the 1920s and 1930s. We studied two areas that represent middle-class dwellings, namely, Hospital Clínic (22 building permits between 1923 and 1935) and Sagrada Família (12 building permits between 1923 and 1932). For working-class dwellings, we analyzed eight examples of economical houses on the periphery of Barcelona and neighborhoods of economical houses promoted by the municipal government. We also analyzed singular dwellings of the wealthy. We selected the projects undertaken by Josep Puig i Cadafalch in the 1920s and 1930s and those of Francesc de Paula Nebot due to their representativeness and availability.[4] For this period, we studied the proposals for social housing and dwellings for the wealthy that were closely associated with the European avant-garde and carried out by the Group of Catalan Architects and Technicians for the Progress of Contemporary Architecture (GATCPAC).

2.3. Dwellings built in the 1940s and 1950s

During this period, the debate about the kitchen space reached the architecture field because of various initiatives. The problem of lack of housing was prominent and led to social housing being promoted from the 1940s onward. We studied some of the first public initiatives, such as Torre Llobeta (started in 1948) and the Juan Antonio Parera estate (started in 1950), which were built in the peripheral areas of the Eixample and between the Eixample and the old towns of the plain to form a continuous urban fabric. We compared these dwellings with others built for the wealthy, such as the dwellings by Francesc Mitjans in Turó Park (1944–1957) and those by Pere Benavent de Barberà in the higher areas of the city. These architects are recognized in their context and are well-documented.[5] For the 1950s, we analyzed social initiatives for people with scarce financial resources (mainly slum dwellers) to house them in isolated areas without services, such as the neighborhood of Trinitat Nova (started in 1953). These proposals were made at the same time as social dwellings intended to become models, including the neighborhood of the Viviendas del Congreso Eucarístico (started in 1952). Finally, we analyzed residential estates built at the end of the 1950s, such as the Guineueta estate (started in 1953, with a public offering in 1960) and the Sud Oest Besós estate (started in 1959).[6] We analyzed these developments in the context of architectural initiatives and debates, such as the housing competition held by the Architects' Association of Catalonia in 1949, which led to considerations of how social housing should be approached.[7]

An analysis of these cases revealed the specificities of cooking and eating spaces in urban dwellings in Barcelona and highlighted similarities to and differences from the debate of modernity.

3. Precedents: a small and subsidiary kitchen

In the 1920s, kitchen space was not lost because it had never been abundant. From the consolidation of apartment buildings in the mid-19th century to the end of the same century, kitchens were small and subsidiary both in modest houses and the homes of the wealthy. Kitchens were the place for everyday tasks that were not highly valued or a place for domestic servants.

[4]National Archive of Catalonia and the Historical Archive of the Architects' Association of Catalonia.

[5]Historical Archive of the Architects' Association of Catalonia.

[6]Social housing actions that we have studied on the basis of the records kept in the Contemporary Municipal Archive of Barcelona.

[7]The original competition documents are held in the Historical Archive of the Architects' Association of Catalonia.

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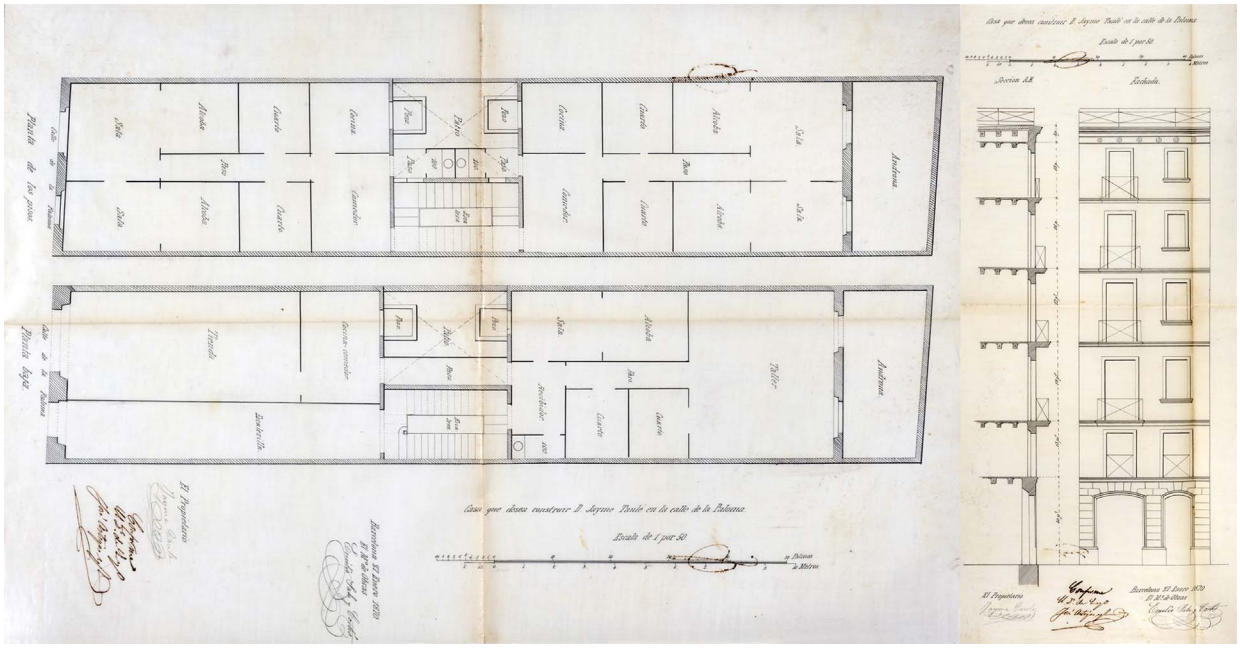

Figure 1 Carrer Paloma 17, Barcelona, 1870. Emilio Sala, master builder. Source: Arxiu Municipal Contemporani de Barcelona.

This period included momentous changes, including the creation of the Eixample, the Modernista generation, the development of some service networks, such as water supply and sewerage systems (with the incorporation of water closets), and the introduction of new forms of consumption. However, the kitchen space remained practically the same. In working-class dwellings, no changes occurred at all; in the homes of the wealthy, the changes exerted negligible effects on this subsidiary and disregarded space.

Working-class dwellings within the walled city were in narrow, elongated buildings, which led to a certain degree of difficulty in the layout of spaces and in coordinating the limitations imposed by a building between party walls, with great depth, and that required inner courtyards for ventilation (Figure 1). In these dwellings, the kitchen and dining room were closely linked to the central courtyard, close to which the shared stairway was also situated. The most representative spaces, the living room or living room and bedroom, were arranged in the bay of the façade. The dining room was also the hall in many cases. This room was a central space, close to the door, which was used to eat, receive visitors, or work. Next to the dining room and with an opening onto the inner courtyard was the kitchen, which was a small, separate room. In these dwellings, the hall, dining room, kitchen, and inner courtyard comprised a central, functional block, where a privy also existed, which led to sanitary problems because cesspits were still used at the time. In these apartment buildings, elements of the kitchen were defined that would persist for decades. In all cases, the kitchen was small with a straight or L-shaped workbench. This workbench contained wood or coal stoves and a sink. In general, a pantry also existed, sometimes within the kitchen, or if no space was available, in the entrance hall to the dining room.

A much large surface area was available for the arrangement of spaces in the dwellings of the wealthy. Apartment buildings in upscale areas followed a model based on urban gothic mansions (Figure 2). These buildings were between party walls and organized around a central courtyard, in which the ground floor, the mezzanine floor if available, and the main floor were for the dwelling of the owners. The ground floor housed the stables, sometimes the wine store, and spaces associated with the business of the house. The kitchen (if no mezzanine floor existed) and spaces for domestic servants were also found here. Close to the kitchen was an internal staircase that led to the dining room, situated on the main floor.

The arrangement of the kitchen in the dwellings of the wealthy was insignificantly different from that of the basic dwellings described above. The kitchen was a space used by servants; thus, it was one of the subsidiary rooms that served the main spaces. The owners of the house would not have entered the kitchen. Consequently, this space was practically identical to kitchens in basic houses, with few variations. By contrast, the dining room was in a well-defined space in these dwellings, situated in the most valued area, normally in the central part of the back bay and open to the back courtyard, although this courtyard tended to be small or a simple passageway in dwellings in the walled city.

In these houses, water generally came from a well or fountain (Guàrdia et al., 2011). The services and sanitary conditions were similar to those in the working-class dwellings, despite the higher category of these homes and the availability of a larger area. The kitchen was close to the privy and it also shared the same ventilation courtyard in many cases, which meant that the wastewater and the well were also close to each other. Similar to the kitchen arrangement, the amenities

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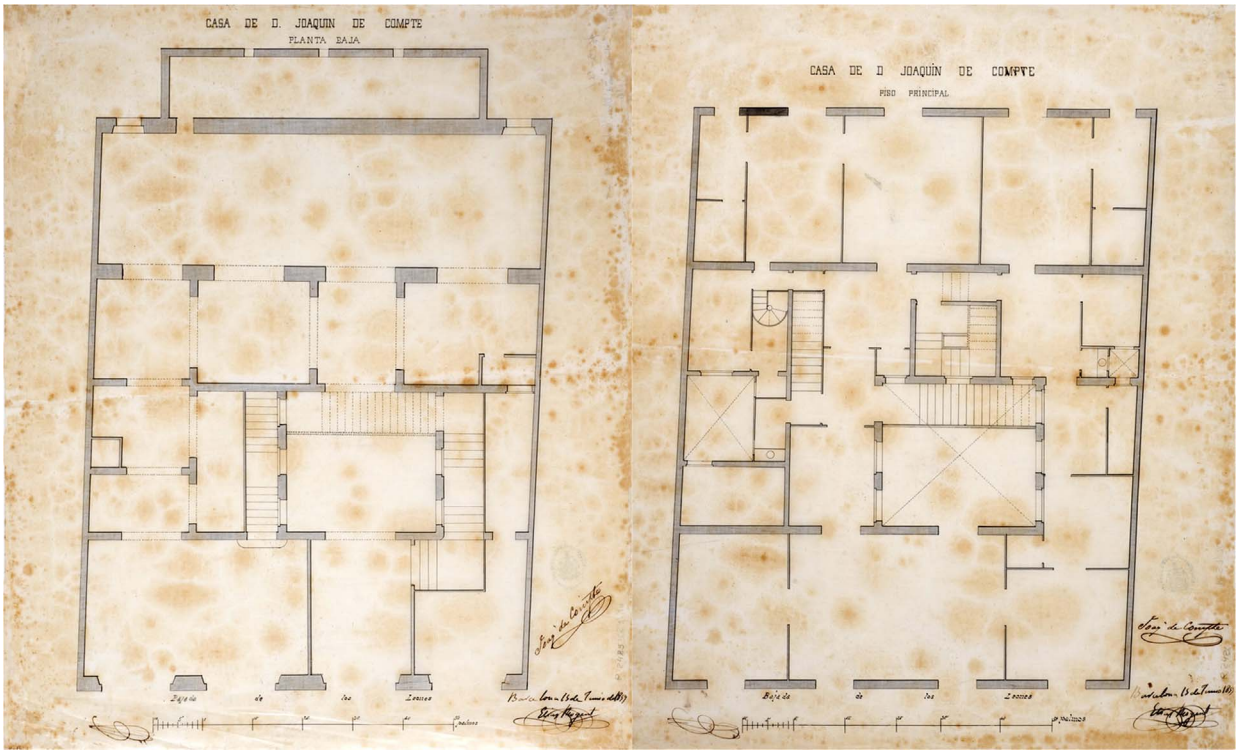

Figure 2 Carrer Ataülf 12, Barcelona, 1859. Elies Rogent, architect. Source: Arxiu Municipal Contemporani de Barcelona.

did not differ much from those in modest kitchens. They included a straight or L-shaped workbench, two or three small stoves depending on the category, and a sink with a draining board[8] for dishwashing (Figure 3).

The approval in 1859 of Cerdà's Plan for the Expansion of Barcelona led to a major transformation of the city. The Eixample had become a consolidated reality in the following decades, and it had turned to central from 1897 with the annexation of towns on the plain. Mature, tested types of dwellings were constructed, which adapted to and were suitable for a range of economic standards.

In the kitchens and dining rooms of dwellings in working-class areas, such as Sant Antoni, many solutions persisted that had been inherited from the walled city. For example, the dining room continued to be situated in the central bays associated with the kitchen and courtyard. In the smallest dwellings, the dining room also served as the entrance hall and was situated in the central block. In some large dwellings, the dining room was located along the back façade, that is, a position emulating that observed in the dwellings of the wealthy at the beginning of the period, which was gradually being introduced into middle-class dwellings (Figure 4).

The kitchens were basic, closed spaces, with a floor plan that was generally rectangular, dimensions no greater than 7 or 8 m^2, and an opening onto an inner courtyard. Regarding the elements that comprised the kitchen, coal stoves were still present, either two or three depending on the dwelling, and a sink. A pantry was only included in large houses, and we found no evidence of kitchen cupboards or furniture for keeping food. In other words, the kitchen in these dwellings was almost identical to that found in the previous period, both in terms of how it was valued and its characteristics and features.

In the dwellings of the wealthy in the Sant Pere neighborhood, the location of the dining room was established in the central part of the back bay. The representativeness of the dining room was important, and a light situation with more privacy than the main façade was sought (Figure 5). The kitchen was still associated with the domestic service area, which meant it was also linked to a courtyard (central or by the party walls), and still close to the privies. From 1892, some dwellings in this neighborhood had water closets, which implied that the networks of running water and sewerage had been improved in sanitary and olfactory aspects.

These flats were large, often 120–150 m^2; thus, all rooms were spacious, including the kitchen. However, the kitchen form was almost identical to that described above. The main change was the presence of a kitchen range in some dwellings from the start of the 1890s (Figure 6). In some cases, kitchens were equipped with two types of cookers, namely, stoves and a kitchen range. The coexistence of these two types continued long after this period (some examples could be found from the 1930s). Evidence of coal bunkers, a sideboard to keep things in, and better delimited sinks was found in some kitchens. These additions showed that close attention was

[8]The kitchen model at this time is perfectly illustrated in the description and prints by Ildefons Cerdà in *Teoría de la construcción de las ciudades aplicada al proyecto de Reforma y Ensanche de Barcelona* (Theory of the Construction of Cities, Applied to the Project for the Renewal and Spread of Barcelona), 1859.

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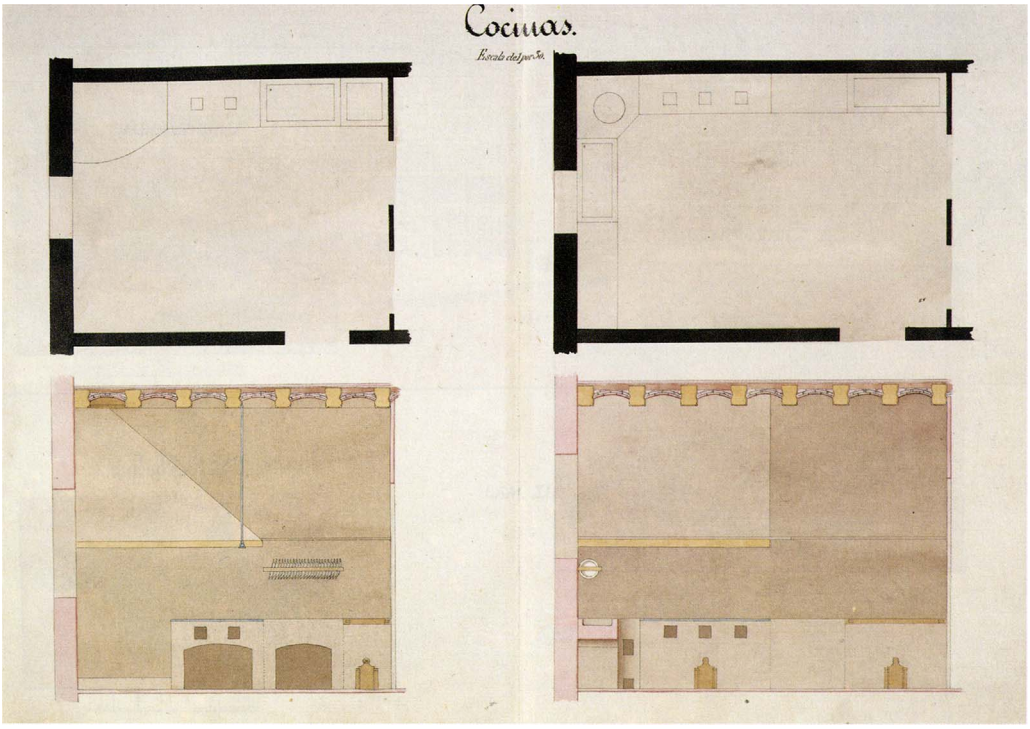

Figure 3 Plate showing kitchens in Barcelona collected by Ildefons Cerdà. Source: Cerdà, I., Teoría de la construcción de las ciudades aplicada al proyecto de Reforma y Ensanche de Barcelona, 1859.

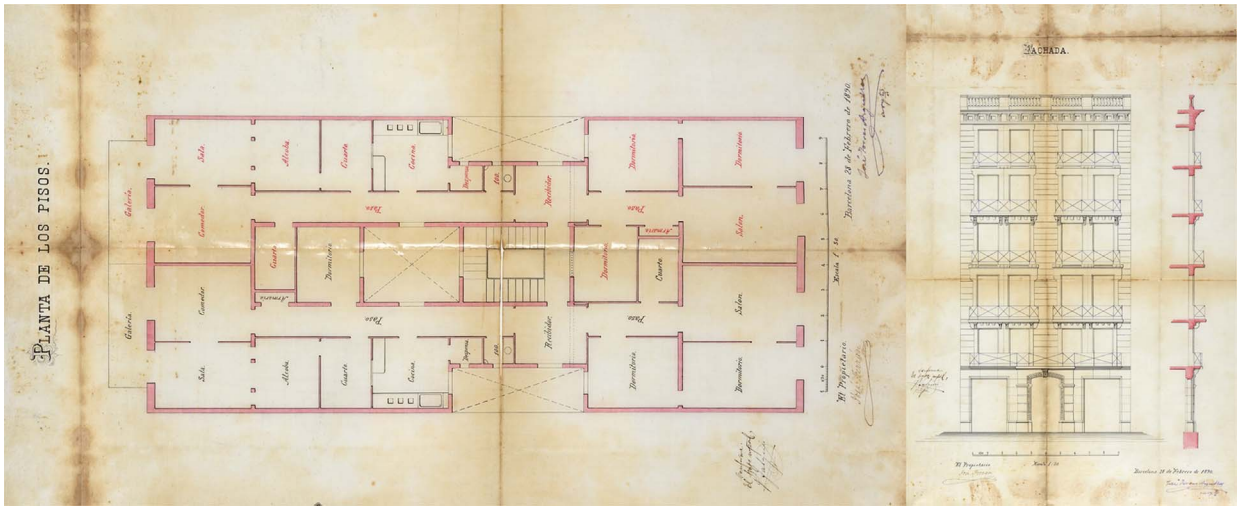

Figure 4 Carrer Manso 70, Barcelona, 1889. Josep Tomas Argullol, architect. Source: Arxiu Municipal Contemporani de Barcelona.

paid to this space, technical complexity had increased, but ways of doing things and working remained the same.

In other words, during this period, a kitchen model was established that would last for decades. At no point did we identify an interest in this space that went beyond strict functionality. Over the period, the conditions of running water and sewerage were improved and gaslight was introduced, followed by electricity in the houses of the wealthy. However, this improvement was not accompanied by changes in the value given to the kitchen. The only improvement was the replacement of wood or coal stoves for kitchen ranges at the end of the 19th century and the start of the 20th century, but this change only occurred in the houses of the wealthy.

In no case did we encounter the idea that the kitchen was also a space to spend time in, as in social housing proposals in France. In social and economic terms, Monique Eleb (1995) provided an example of the start of modernization and rationalization of the kitchen as the foundations of workers' dwellings before World War I. In these dwellings, the kitchens were integrated into the dining rooms. This idea was also described by Clarisse (2004) in dwelling designs for philanthropic societies, in which a solution for the kitchen was sought as either a closed room

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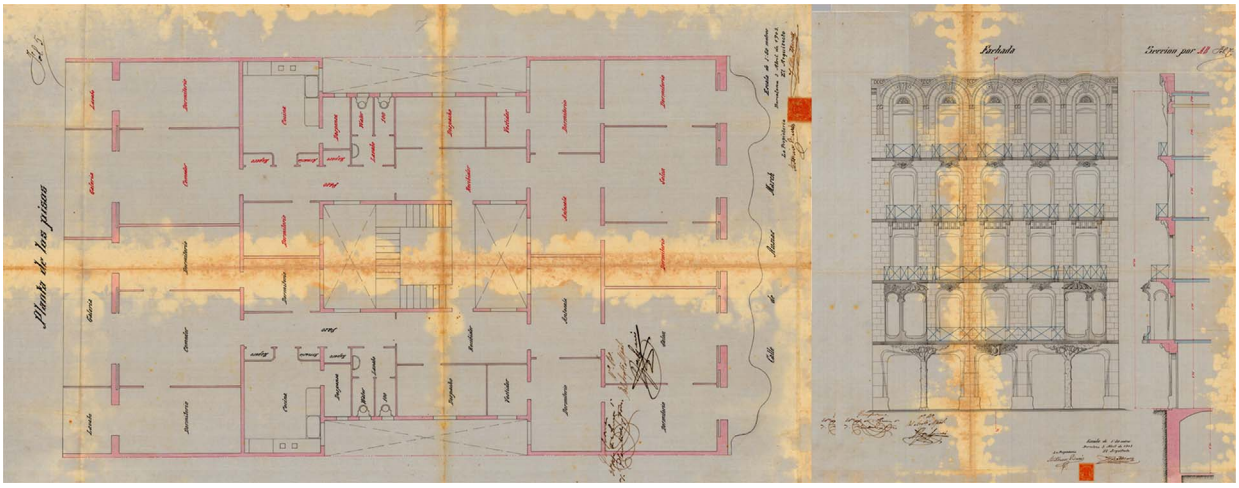

Figure 5 Carrer Ausias March 46, Barcelona, 1903. Juli Batllevell and Enric Pi, architects. Source: Arxiu Municipal Contemporani de Barcelona.

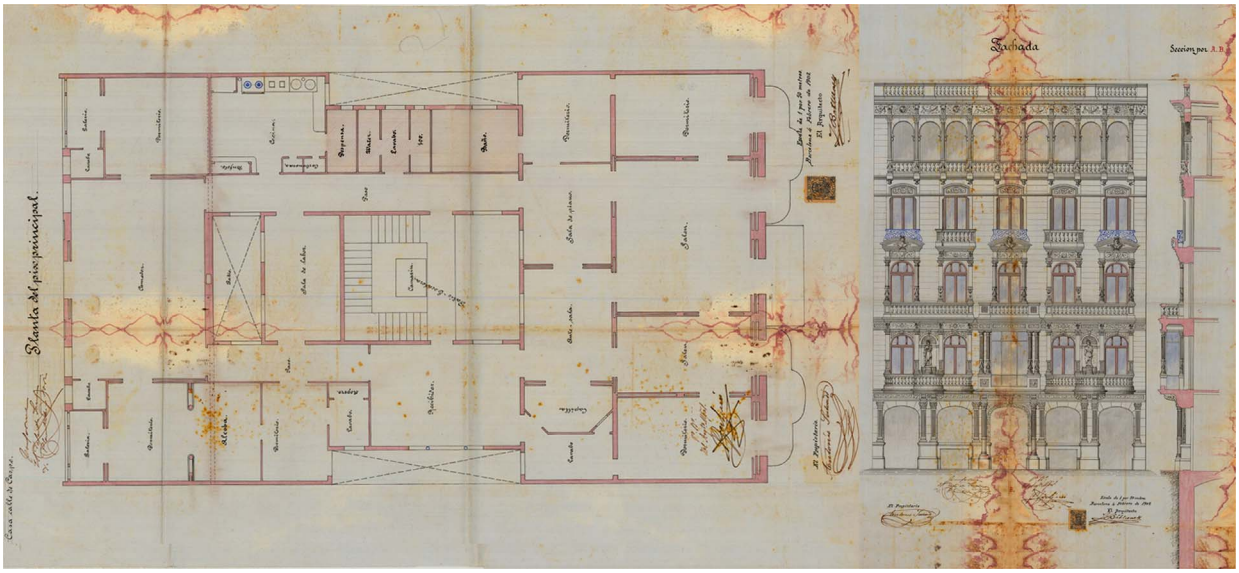

Figure 6 Carrer Casp 46, Barcelona, 1902. Juli Batllevell, architect. Source: Arxiu Municipal Contemporani de Barcelona.

or a place for eating, depending on who was going to live in the dwelling. These changes in approach were not applied in Spain, where kitchens were still spaces for domestic servants in the dwellings of the wealthy or spaces given minimal value and associated with women's everyday tasks, which generated smoke and smells that had to be contained.

4. The 1920s and 1930s: Mirage of the modern kitchen

In the 1920s and 1930s, kitchens in conventional dwellings maintained the same values and characteristics as in earlier periods. The influences of proposals from the international debate on architecture were strictly limited to the avant-garde. Within this group, new approaches were only adopted in some specific cases. In all cases, kitchens reflected the criteria associated with conventional models because this space was not yet valued within the discipline of architecture, the commissions were conservative, and technological capacity and services had limited accessibility.

This lack of change was observed in various circumstances. The enormous growth of the city led to clear social segregation between the center and the periphery, that is, between the city that enjoyed services and that which was completely disregarded. In one, progress was made in incorporating electricity to provide domestic lighting, introducing gas for cooking, arrival of telephone services, and widespread introduction of rooms for personal hygiene in middle- and upper-class houses. In the other, the city grew without urbanization, that is, without any services or facilities. In this context, the lack of change in the kitchens of working-class dwellings seems explicable. However, what was difficult to understand was the situation in which the

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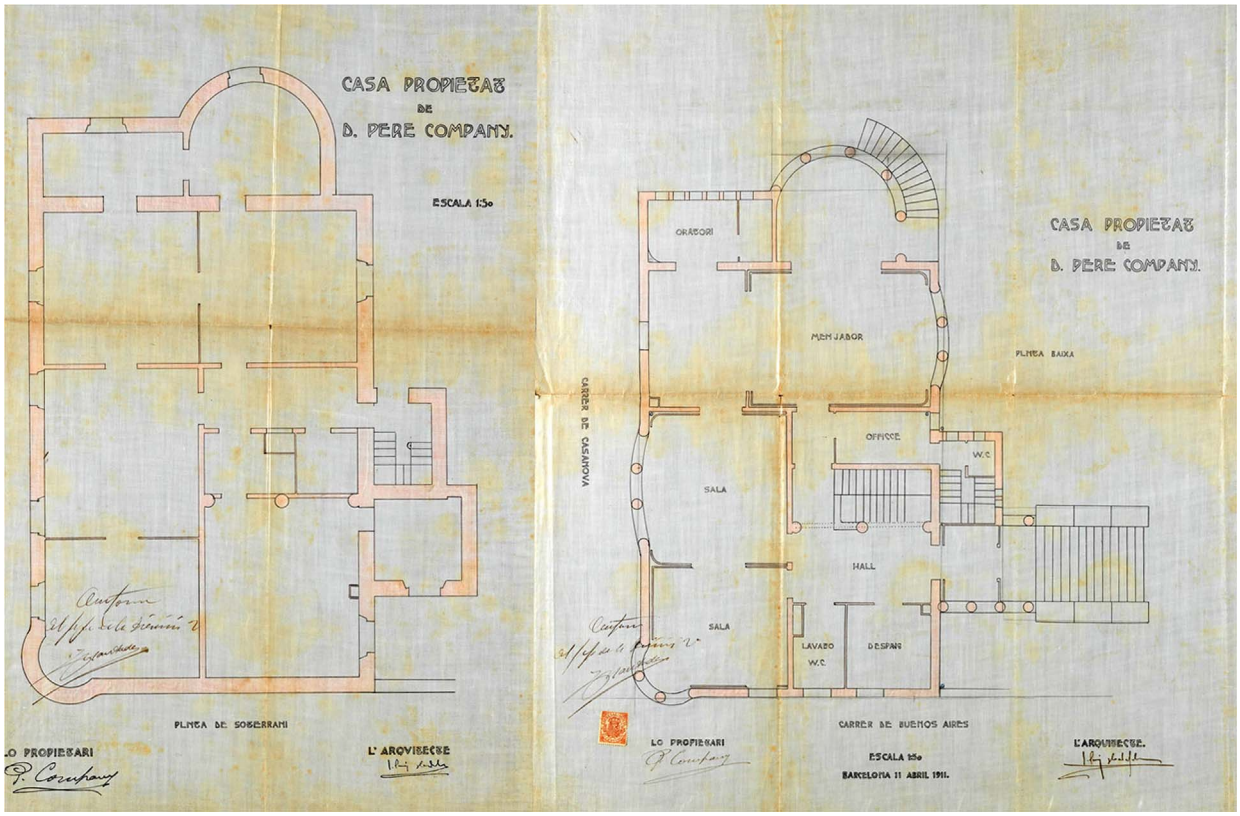

Figure 7 Carrer Buenos Aires 56, Barcelona, 1911. Josep Puig i Cadafalch, architect. Source: Arxiu Municipal Contemporani de Barcelona.

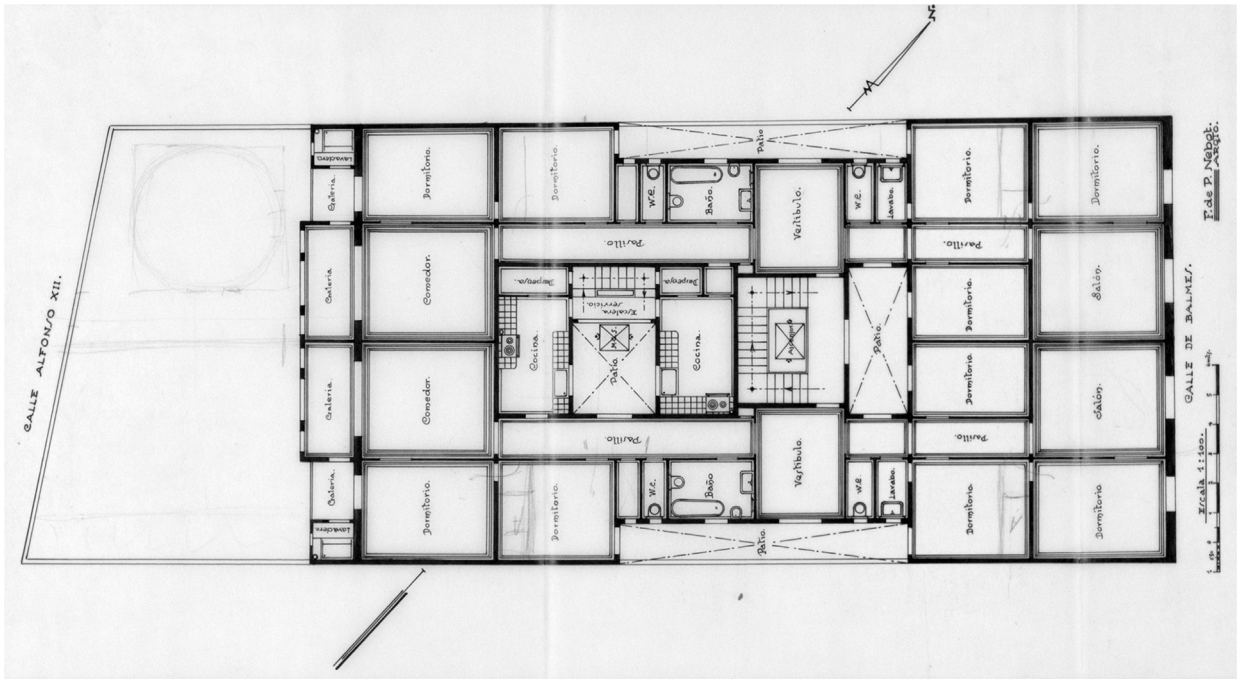

Figure 8 Carrer Balmes, Barcelona, 1930. Francesc de Paula Nebot, architect. Source: Arxiu Històric Col·legi d'Arquitectes de Catalunya (COAC).

wealthy classes and even the avant-garde elite did not introduce what was starting to become a novelty shared in more advanced countries.

During this period, the wealthy classes gradually moved to detached houses in the higher part of Barcelona, in areas that had better environmental conditions (Figure 7). These

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houses were still designed with domestic service in mind. The kitchen was in the basement along with the pantry, the servants' quarters, and the more functional spaces, such as the coal bunker and the ironing room. The ground floor was the representative space and the space for social activities. Reception rooms tended to be situated along the main façade and separated from the dining room or small rooms that faced onto the back garden and were more private. In these cases, the dining room was linked to the kitchen through a butler's pantry and a secondary staircase. The bedrooms were situated on the first floor. The approach used in these dwellings was inconsiderably different from that of previous periods in terms of the position of spaces for consumption, namely, the existence of domestic service determined the organization of a house.

In dwellings of the wealthy designed in buildings between party walls, approaches were similar to those found in the Eixample in the previous period for this type of house. The dining room was still in the back bay but was better connected to the kitchen, which was closer, and to the pantry, which was ventilated. The rooms for personal hygiene were also in the central block, ventilated to the same courtyard as the kitchens and pantries. By contrast, considerable changes in layout were found in other buildings. The approach of a Gothic-style mansion that had been adopted up to this time was rejected. The fact that lifts became normal meant that all floors were treated equally. In fact, the upper floors were highly valued because they were light and quiet. Consequently, floors were organized into two blocks, namely, that of the main staircase that received the same treatment on all floors and that of the secondary servants' staircase that also provided access to all floors and was for domestic servants and concierge (Figure 8). These two blocks influenced the floor layout. The kitchen, pantry, and some secondary rooms were situated around the servants' staircase. The rooms for personal hygiene were linked to another courtyard, and this function and cooking were therefore separated. The rest of the rooms still followed a hierarchical pattern. The living room and some bedrooms were opened onto the main façade, and the dining room and other bedrooms were along the back façade.

Some significant factors were evident in the dwelling amenities. The room for personal hygiene was fully developed. In fact, the archetypal bathroom was adopted, as were sanitary appliances.[9] Nevertheless, the only progress in the kitchen was the introduction of a kitchen range, which had already begun at the start of the century, although some plans still showed a kitchen with wooden stoves and a workbench. In terms of the arrangement of furniture or the kitchen workbench, they were represented as basic in the plans, which indicated that minimal attention was dedicated to the kitchen.

In dwellings designed for the middle classes, some elements indicated changes from the previous period, although they might have been minor. This zone contained a type of standardized dwelling almost as a "product," which met the needs of the middle classes (Hereu et al., 2014) (Figure 9). Two types of buildings, namely, one with two dwellings per landing and one with four, were studied. All had similar amenities, but the smallest flats had limitations due to their sizes. Regarding the layout of the spaces, the dining room occupied the central, representative space in the house and opened onto the façade of the street or the courtyard as they were treated equivalently. The kitchens were situated in the central bays, linked to courtyards by the party walls. Significant improvements had been made in some of the dwellings under study. For example, the sanitary block was clearly separated from the kitchen. These spaces were ventilated through different courtyards and had clearly differentiated facilities. A pantry with ventilation and a laundry room also existed. Despite the limited surface area of approximately 50 m^2, these dwellings had a full bathroom, which showed that hygiene habits were important. By contrast, the kitchen amenities continued to be limited. In some cases, built-in cupboards and a kitchen range, which was new in dwellings of this level, as well as a wood or coal stove, were represented.

Regarding working-class dwellings, in the 1920s and 1930s, small single-family homes were constructed on land remaining between the former towns, such as between Sant Andreu and Horta, and in neighborhoods, such as Verdum and Prosperitat (Figure 10). In many cases, water in these neighborhoods was still drawn from public fountains (Guàrdia et al., 2011). No sewerage network existed, and all the plans we studied showed a septic tank or even a cesspit in some cases. The plan of the city's electricity network for this period showed that these areas had no electricity. Therefore, conditions in the dwellings were almost the same as those found in the city center almost a century before. In the historic center of the city, specifically the Raval, many technical limitations remained throughout this period, which clearly demonstrated that this problem was associated not only with centrality but also with political and corporate will.

Such small houses, with size from 25 m^2 to 35 m^2, included one or two rooms that opened onto the façade, leaving a corridor to access the back of the house where the dining room, the central space, was situated. From the dining room, a courtyard was accessed, which contained the kitchen and a water closet. Amenities were only specified in one of the plans that we studied, which showed details of a kitchen with two wood or coal stoves and a sink.

All these examples illustrated what we stated above, that is, the kitchen and dining room generally maintained the values identified in the previous period. The kitchen continued to be a subsidiary space, either because the household had domestic servants or because it was strictly limited to women's tasks, unlike the situation found in other countries. The dining room was a representative space and a place for family rituals in wealthy houses and a central space for many activities in modest homes. We only identified a few changes in layout in the houses of the wealthy and middle classes, such as a better connection between the kitchen and dining room, a ventilated pantry, and the introduction of a kitchen range in many homes. In addition, courtyards for the kitchen began to be separated from rooms for personal

[9] The consumption of running water increased significantly but not in proportion to the population growth, which indicates that its use increased among the wealthy, but the most disadvantaged groups did not have access to this service (Guàrdia et al., 2011).

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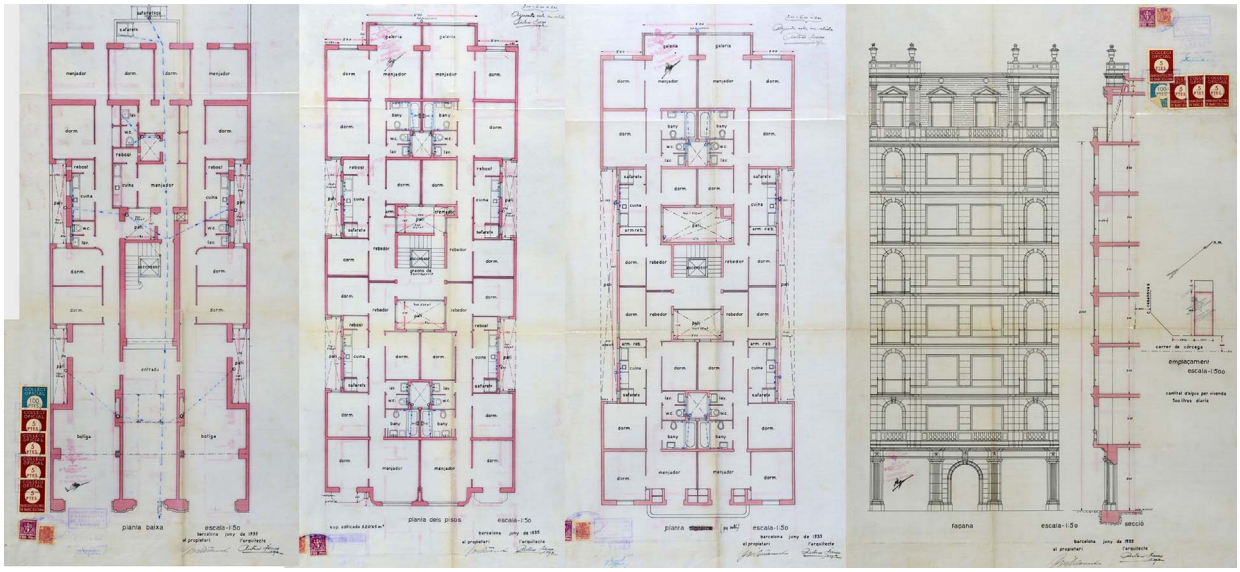

Figure 9 Carrer Còrsega 211, Barcelona, 1935. Antoni Fusas, architect. Source: Arxiu Municipal Contemporani de Barcelona.

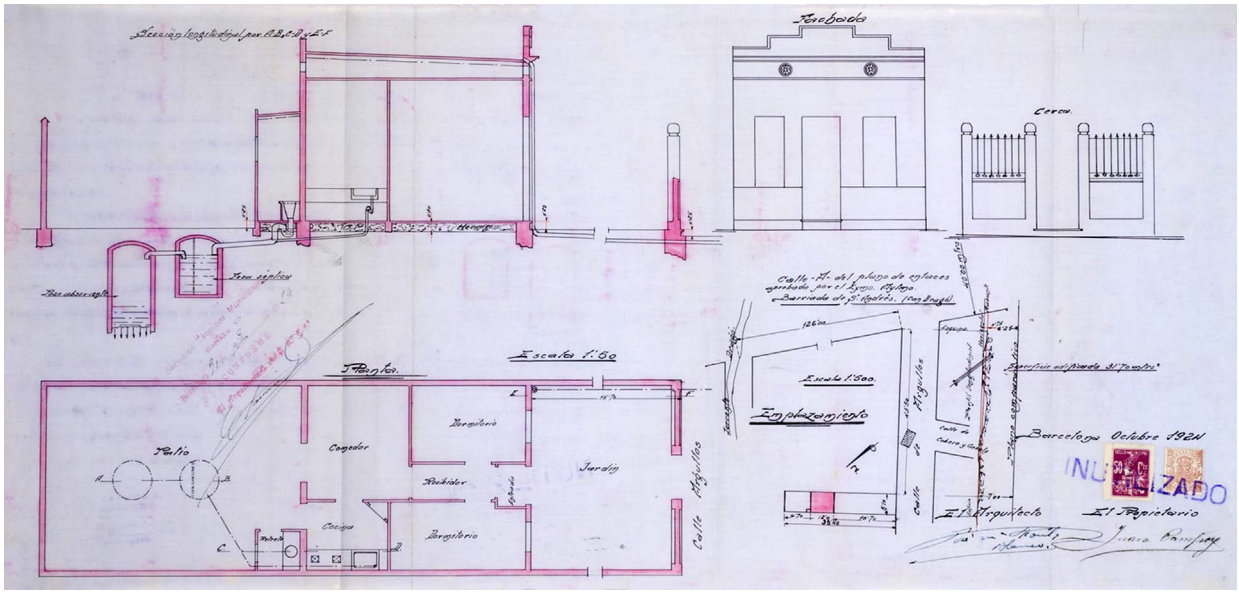

Figure 10 Carrer Argullós, Sant Andreu, 1924. Source: Arxiu Municipal Contemporani de Barcelona.

hygiene. Hygiene norms began to be defined and established among the wealthy, and their dwellings already clearly incorporated a "standard" bathroom.

Gas that was initially installed for lighting began to be used for other functions. The gas industry, which was being ousted from the lighting business, sought to specialize in the kitchen and worked to disseminate this idea (Arroyo, 1996). However, this change was still not defined in the plans because the introduction of gas meant simply putting a gas stove over the kitchen range (Figure 11). In terms of food preservation, we found no evidence of appliances, such as gas or electric refrigerators. The only improvement observed in this area was ventilation of the pantry.

The situation described contrasts with the proposals and changes in European modern architecture, where innovations in the kitchen space exerted major effects on the architectural debate. Architects who were close to the avant-garde, particularly in Germany, made the kitchen a central theme in the housing debate, and numerous proposals emerged in the architecture field. In 1927, the Frankfurt Kitchen was presented at the *Neuzeitliche Haushalt* exhibition in Frankfurt. In the same year, this design was presented at the *Werkbund exhibition* at Stuttgart-Weissenhof and made a strong impression. The Frankfurt kitchen introduced to housewife workers the separation of the kitchen from home life; thus, cooking was considered work, and the kitchen was constructed with specific furniture (Spechtenhauser, 2006).

In France, journalist Paulette Bernège wrote articles for architecture journals, disseminated United States studies to

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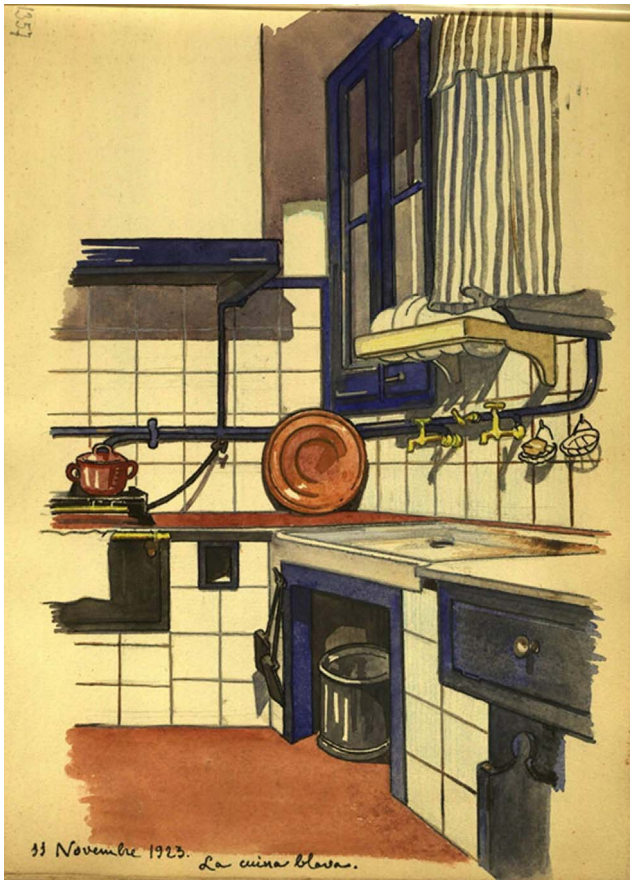

Figure 11 "La cuina blava" (The Blue Kitchen), 1923. Source: Quaderns de Joaquim Renart. Biblioteca de Catalunya.

the public, and authored *Si les femmes faisaient les maisons* ("If women made houses").[10] In 1929, she was a guest speaker at the CIAM "Logement mínimum" in Frankfurt. In Paris, the *Salon des Arts Ménagers* was held every year between 1923 and 1983, and Paulette Bernège presented American kitchens at this event during the 1920s and 1930s. An exhibition on dwellings, entitled *L'architecture d'Aujourd d'hui*, was held in 1934 (Clarisse, 2004).

This situation led us to consider the impact of avant-garde proposals on architecture in Catalonia and whether this environment was open to modern solutions. For this purpose, we analyzed proposals made by the GATCPAC using the *AC* journal *(Documentos de Actividad Contemporánea)*, published between 1931 and 1937. We focused on urban residential buildings designed by members of this group either individually or as GATCPAC and published in the journal. They can be divided into two clearly differentiated groups, namely, privately developed buildings, which were mainly buildings between party walls in wealthy zones, and social housing, a topic that was dealt with in-depth in various issues of the journal and was illustrated by the Torres i Bages houses, the Casa Bloc, or proposals for workers' houses, such as the case in the Eixample.

In the houses of the wealthy, we found elements that were very close to European architecture, such as the double height of some dwellings, and a clear commitment to functional layout and optimal ventilation and orientation, which made these dwellings points of reference. However, an innovative approach to kitchens was not taken. All these dwellings were for families with servants. Consequently, the kitchen and other functional rooms (pantry, ironing room if present, and others) comprised separate servants' quarters with a bedroom and bathroom included, following the conventional norms of wealthy dwellings from the mid-19th century[11] (Figure 12). All these houses consisted of a butler's pantry, a space where servants prepared the dishes, between the kitchen and the dining room. The dining room was situated in a representative, social place in the dwelling. A connection existed between the dining and living rooms, with sliding doors or clear openings, which was a new layout with respect to conventional dwellings.

In terms of the characteristics and organization of the kitchen, as well as the inclusion of appliances, the only case we found that was clearly in line with European proposals was that of the house on Via Augusta by Germán Rodríguez (Figure 13). The kitchen and butler's pantry were detailed, with a solution that was similar to German proposals, such as those in 1927 at the *Weissenhofsiedlung*, Stuttgart. The amenities, built-in cupboards, and domestic appliances were described.[12] The installation of refrigerating units was documented, which we found for the first time.

In middle-class dwellings, the solutions for the floor plan and layout of spaces were similar to conventional models, which we referred to as using the concept of dwellings as "products." Many elements were maintained in these dwellings, such as inner courtyards, where the kitchen, bathroom, and bedrooms coincided, although a better connection was sought between the kitchen and the dining room, which also functioned as a living room. Accordingly, the type of development and the market exerted greater impacts than the wishes of the person who designed the dwelling. In the kitchens, significant attention was given to amenities and appliances, such as gas cookers, and the space was more defined than before, but without major changes.

The ideology of the group, its international connections, and, above all, its main innovations with respect to conventional proposals were illustrated most clearly in the designs for social dwellings. In a minimum housing trial, which for GATCPAC was the group of Torres i Bages working-class dwellings, we could determine many of the concerns

[10]Paulette Bernège, *Si les femmes faisaient les maisons*, A Mon chez moi, 1928.

[11]In the Galobart house by Josep Lluís Sert, servants' quarters are on the basement floor. In dwellings on Carrer Muntaner, also by Sert, the servants' quarters are on the top floor, but with the same idea that this space is allocated to servants.

[12]Notably, the report by AC states: "Heating is central, using hot water and a "Ray" burner of "Fuel Oil", which is very economical. The cookers are gas fuelled, with four rings, an oven and grill and made in Spain. The automatic refrigeration units are "Electrolux", type M-3, operate with gas and water, and are independent for each dwelling. The automatic water heater are "Junkers" fuelled by gas. They are situated in the kitchen with forced ventilation and distribute hot water to the bathrooms, toilets, bidets, showers and kitchen sinks, so that gas pipes do not have to pass inside the dwelling. The bathrooms and toilets are ventilated by a specific pipe with a large volume.".

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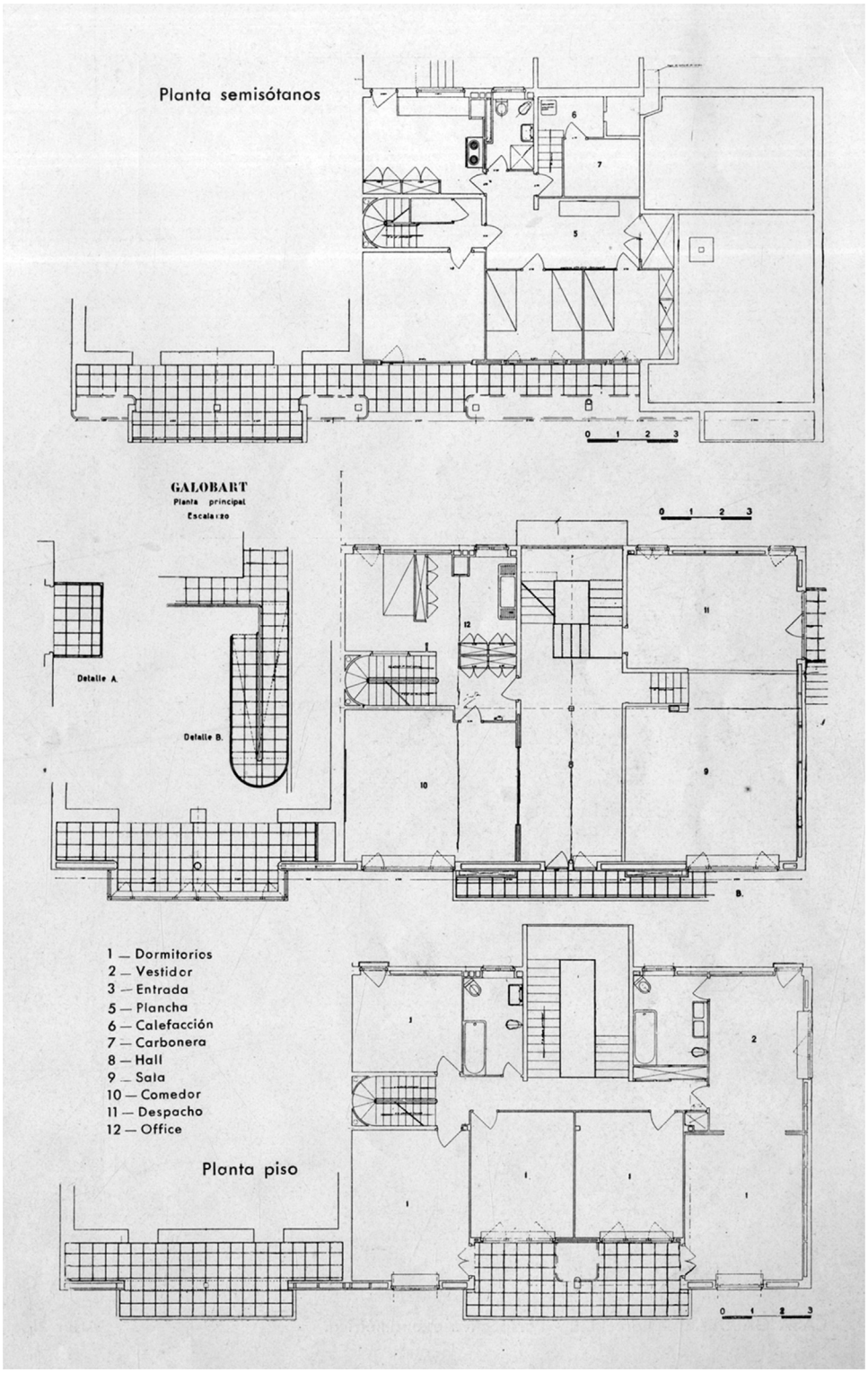

Figure 12 Casa Galobart, Barcelona, 1932. Josep Lluís Sert, architect. Source: Revista AC (Documentos de Actividad Contemporánea), no. 8, p. 18, 1932.

of modern architecture, such as the need for good connections with the rest of the city and good insulation and ventilation of all rooms; thus, the maximum depth was sought while ensuring cross ventilation. The kitchen and dining–living room, which was also the entrance hall, were central and clearly linked to the ground floor.

Many of the approaches tested by the group in the Torres i Bages houses were adopted in the Casa Bloc proposal (Figure 14). Relevant organizational approaches were introduced, such as the kitchen and hygiene blocks at the entrance and clearly separated. Comparison of the Casa Bloc with other modest dwellings highlighted the

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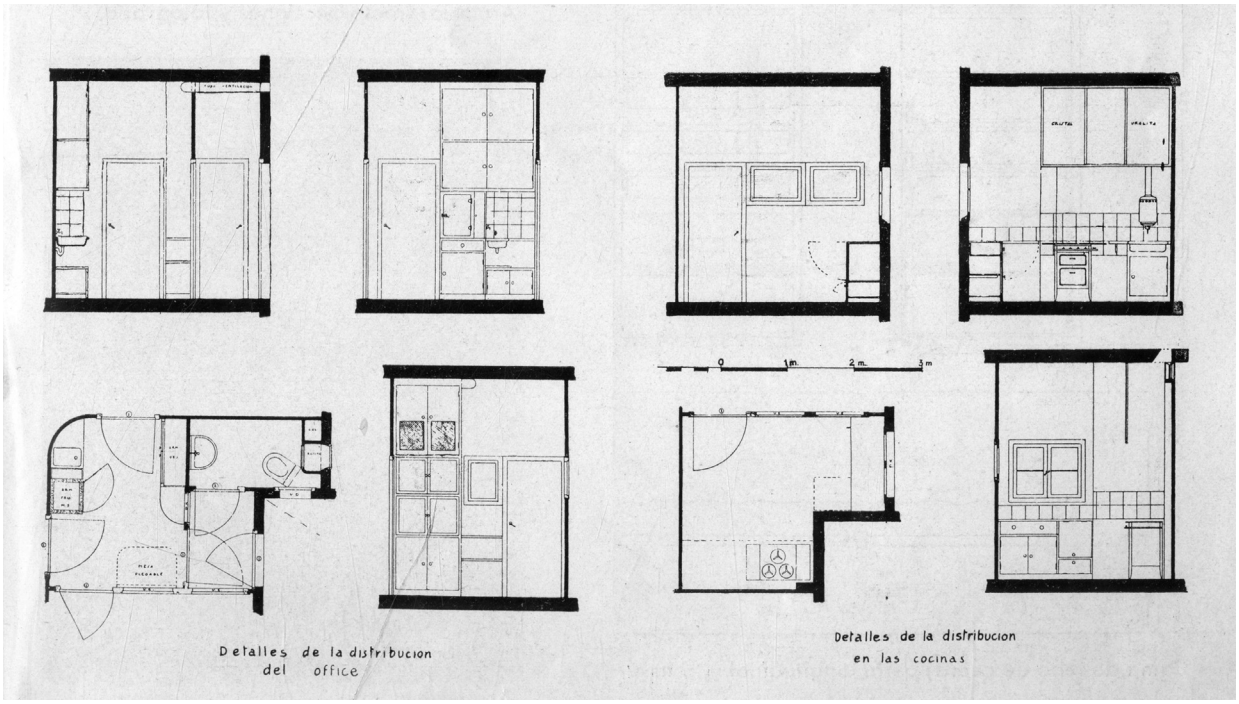

Figure 13 House on Via Augusta, Barcelona. Germán Rodríguez, architect, 1931. Source: Revista AC (Documentos de Actividad Contemporánea), no. 8, p. 22, 1932.

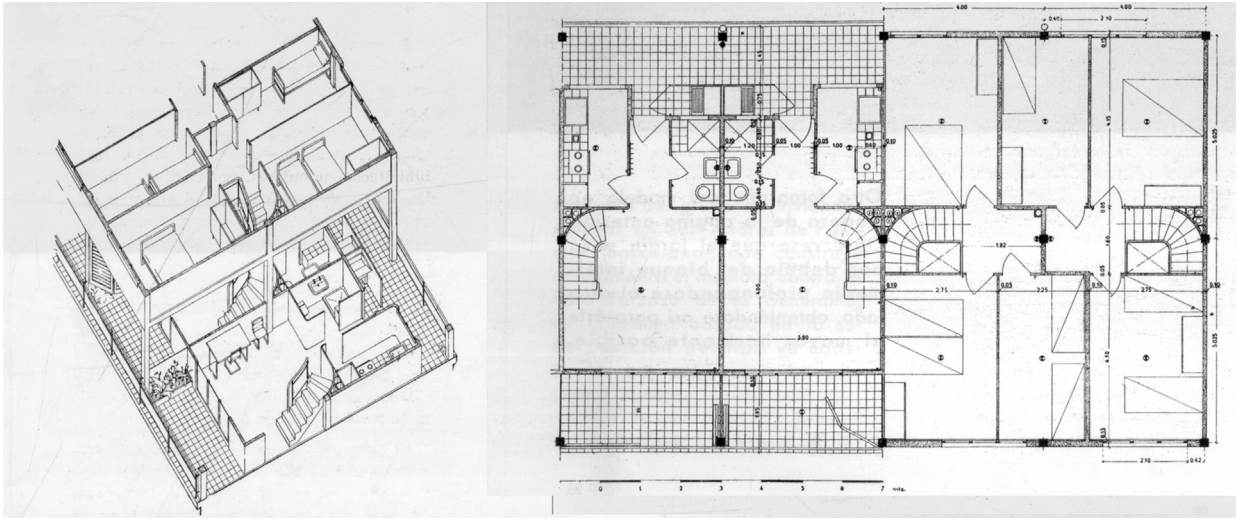

Figure 14 Working class dwellings in Barcelona (Casa Bloc). 1932–1936. Project of GATEPAC. Source: Revista AC (Documentos de Actividad Contemporánea), no. 11, p. 22, 1933.

considerable attention given to the quality of the working-class dwelling. Some specific elements of the dwellings were described in a journal article, "Each dwelling will consist on the ground floor of a dining room, a terrace that can be annexed to the dining room in the summer (by means of large folding windows), a separate kitchen, shower, sink and WC, entrance and laundry room. Communal laundry rooms have not been designed, as they take women out of their homes, making it difficult for them to attend to their tasks." These words revealed at least two things. First, functional and everyday aspects of the home were considered. Second, the vision of women and their work in the home were paternalistic and far from international approaches.

The kitchens defined in both designs followed the same standards as conventional kitchens with respect to organization and appliances, although they were clearly an improvement on the kitchens in small houses in peripheral zones. A kitchen range, as well as an open coal or wood stove, and a sink existed. Innovations in domestic appliances and amenities that were introduced by GATCPAC architects were only for certain economic environments. In any case, service networks, such as gas or electricity, were not yet available in these zones.

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In other words, after studying conventional dwellings and those proposed by modernity, we can state that during this period, the dwelling as a "product" was established for a wide sector of society, with standards of organization, rooms, and services that were clearly defined. However, the kitchen continued to be in a separate, closed-off room (not on show) that was only accessed by the woman of the house and was in a secondary location with few amenities. By contrast, in the same type of dwelling, the bathroom space was well-defined and standardized.

The kitchen was not transformed into an exclusive space either. As we have mentioned, the continuance of domestic service slowed down the kitchen modernization. The kitchen in the residences of the wealthy was situated in the servants' quarters and was not a focus of attention even in modern environments. The model of an avant-garde kitchen was only adopted in the works of Rodríguez Arias, from a technological perspective. These works were the only cases in which gas cookers, refrigerators, and other appliances were clearly represented. Compared with the situation in the United States and Western Europe, Spain was lagging behind in technology.

The influence of the avant-garde was important due to its contribution to the conception of social dwellings, given the international debate was incorporated, and decent, sunny, well-ventilated dwellings were proposed. Despite its formal and technical limitations, the kitchen reached standards that had been inaccessible to the working classes in earlier periods. However, innovations in the kitchen exerted minimal effects on the housing market during this period. Proposals were strictly limited to the avant-garde architectural environment, which was a minority.

The kitchen, as a central space that was efficient and neat and enabled women to attend to tasks other than cooking, was a mirage during this period. The impacts of international initiatives were limited. At the local level, efforts made in some areas—for example, gas companies' endeavors to become established and specialized in the domestic arena by publishing leaflets presenting an idealized kitchen (Fàbregas, 2014)—were unsuccessful (Figure 15). This evolution would probably have occurred in a few years if the civil war had not broken out, followed by the profound crisis that halted any innovation, as we can see in the following.

Figure 15 Advertisements of Catalana de Gas. Author: Joan G. Junceda, 1927. Source: Gas Natural Fenosa Archive.

5. The 1940s and 1950s: combined kitchen-living space only in social dwellings

The combined kitchen-living space only emerged in the 1940s and 1950s as a minimal approach and for cost reduction. Neither the technical capacity nor the economic and cultural references enable us to state that in Barcelona, the kitchen was integrated into the living room to increase its visibility and recognition. This integration was only a question of saving resources, and those who lived in such dwellings closed off the kitchen as soon as they could.

This period was marked by a harsh post-war context. The wave of immigration led to serious housing problems and affected the living conditions of large sectors of the working class. Even in neighborhoods with service networks, considerable limitations were experienced due to supply problems and high costs. For example, in many cases, gas-heating systems were not used because of the high price of energy. The severe drought between 1946 and 1953 also led to restrictions in the supply of water and electricity.

As Barcelona grew, the designs that would mark the city from the end of the 1950s were defined. The growth was due to migration as a result of the war and the lack of opportunities in rural areas. In many cases, substandard dwellings were built in the growth areas through private initiatives, taking advantage of land that was difficult to access and had no services. Numerous self-built dwellings emerged, and neighborhoods of slums could be found in many areas of the city.

The housing problem influenced the architectural debate and triggered many initiatives, such as the 1949 housing competition of the Architects' Association of Catalonia. The winning proposal[13] included an exhaustive study on the lack of dwellings in the city, defined and quantified the need for various types of dwellings depending on the number of family members, analyzed the urban morphology of the Eixample, and proposed alternative solutions. A range of types and dimensions of dwellings were proposed (with surface areas of 34.50, 44, 54, and 72.85 m^2), always in buildings with two dwellings per

[13]The winning team comprised the architects Francesc Mitjans, Antoni de Moragas, Ramon Tort, Antoni Perpiñà, Josep A. Balcells, and Josep Mª Sostres.

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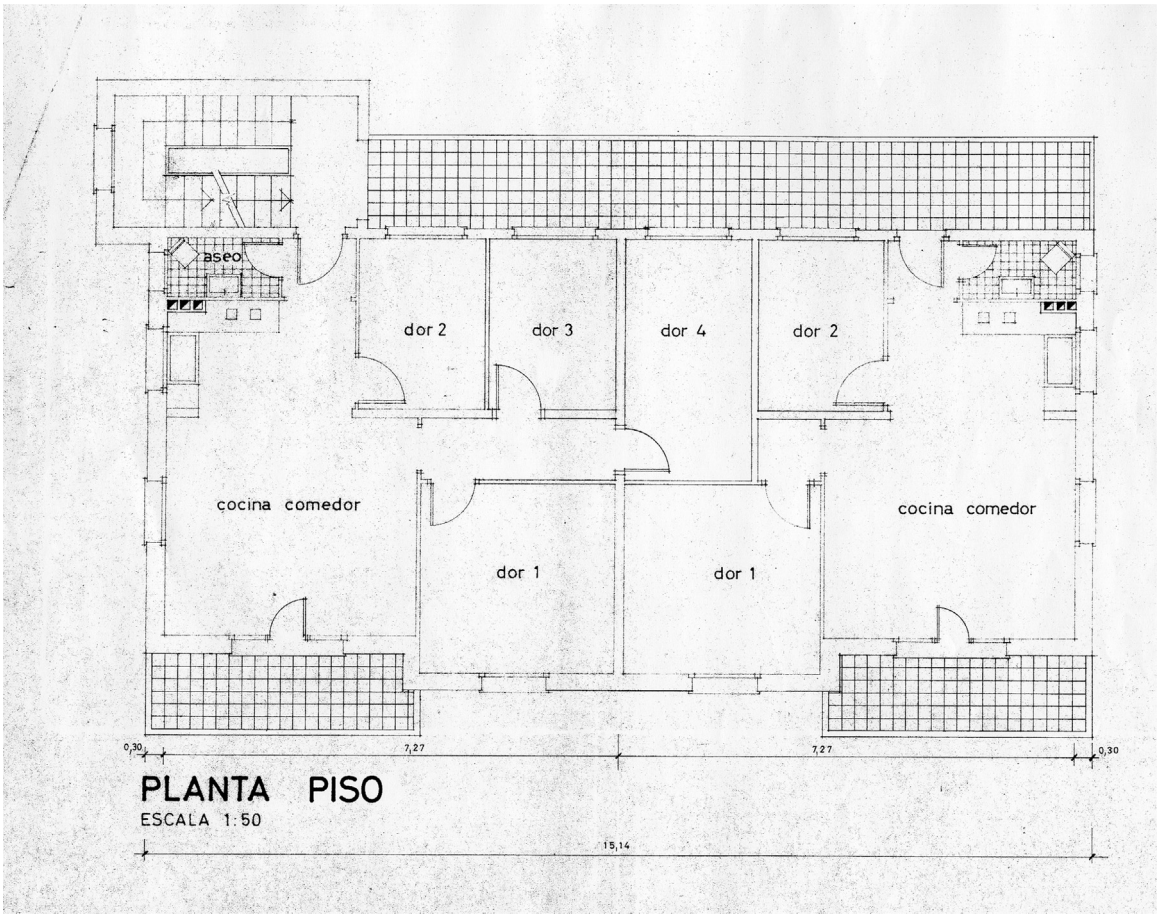

Figure 16 Ground plan of one of the residential buildings of the first phase of the Trinitat Nova estate. 1953. Source: Arxiu Municipal Contemporani de Barcelona.

landing and the staircase in the middle, with two parallel bays. All the dwelling types were organized around a central space that was the hall, living room, and dining room and from which all rooms could be accessed, including the kitchen. In some designs, particularly the smallest, the kitchen was a space that was practically integrated into the living room, like a cupboard. In other cases, the kitchen was a separate space with a surface area of 4–5 m^2 that opened directly onto the exterior, onto the main façade, or onto the back façade (Lesan, 2016).

In this context, the first public initiatives were undertaken to create social housing. Social housing built in the early years of the Franco dictatorship followed models of traditional architecture. In the early 1950s, proposals included some of the modern architecture approaches that were presented in the competition. Minimum social dwellings were built on the city outskirts for people who had been relocated from slums or immigrants who had just arrived. One example was the Trinitat Nova estate, specifically the first and second phases of the zone promoted by the Barcelona Municipal Housing Trust (PMHB) in 1953 and 1959, respectively. The buildings in the first phase had a ground floor plus three floors and varied in length (2, 4, 6, or 8 dwellings per landing) depending on their location on the block and the topography (Figure 16). In every building, the dwellings were arranged alongside one another and accessed from a shared exterior walkway. The stairways were in towers constructed at both ends of the building. Dwellings were small, at approximately 50 m^2, and each one opened onto both façades. A clear aim in the arrangement of the floors was to optimize shared spaces; therefore, the design could meet the requirements of minimum surface area. The distribution of dwellings was compact. The dining room also served as the hall and kitchen and gave access to all bedrooms and bathroom. The kitchen amenities were the minimum of a sink and a kitchen range with one or two rings. Buildings in the second phase had only one bay, and each of the dwellings opened onto both façades. These dwellings were extremely small, at approximately 39 m^2. They were also organized around the dining room and kitchen as the central space, with two bedrooms and a bathroom. In this case, the cooking zone was separated slightly from the entrance by a cupboard. The amenities were also minimum, including a kitchen range with one ring and a sink. Both phases included the proposal of a kitchen combined with the living area, which was a solution that was not observed before this time in modest housing.

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This approach was also applied in the Sud-Oest de Besós estate,[14] which was constructed in 1959. This estate was much more ambitious in size and expectations than others developed prior to this date (Ferrer, 1996). The Sud-Oest del Besós neighborhood comprised 88 blocks of flats, 70 of which were constructed in the first stage (in six phases), and the remaining 18 were in the second stage. Many of the buildings in the first stage were organized with two dwellings per landing and a central stairway. In some types of dwellings, the layout was based on a central room that served as the hall, dining room, living room, and kitchen, from which the bedrooms and bathroom were accessed. The kitchen amenities were basic, namely, they were drawn as a coal or wood stove (still in 1959), a sink, and a marble kitchen workbench. The buildings had electricity, but no space seemed to have been set aside for a refrigerator. In other words, the form of the dwellings was modern and similar to the examples in the rest of Europe, but the level of amenities and comfort in the kitchen space was the bare minimum. Inhabitants had to cook the difficult way in a small space without resources and in a neighborhood without services, and the population had no access to services.

In modern environments, the kitchen integrated into the dining room was a solution that was associated with the minimum dwelling and with other factors, such as not isolating the person who was working in the kitchen, access to amenities that simplified the task of cooking, and other dietary models. However, in Barcelona, an integrated kitchen and dining room was only proposed in these basic dwellings for families that were large in some cases, with no access to services or amenities that facilitated the task of cooking. In these cases, the integration was conducted for strictly economic reasons, given that these housing developments were designed only to provide shelter for the maximum number of families.

This solution was not applied in the model neighborhood promoted by the church that was constructed in the same years, that is, the Vivendes del Congrés Eucarístic.[15] Here, the dwellings were organized around two parallel bays of small depth, which enabled cross ventilation. All rooms opened onto one of the façades (Figure 17). In these dwellings, the zone that the living-dining room and kitchen occupied was beside the access stairway. Each of these rooms was situated in one of the bays of the building and opened onto one of the façades. The area that contained the bedrooms and bathrooms was separated from the zone of the living-dining room and kitchen. Thus, a clear differentiation existed between zones (Hereu et al., 2011). The kitchen opened onto the back façade via a balcony, which meant that the kitchen was light and had direct ventilation. The kitchen layout did not vary significantly from what we have seen previously. An L-shaped bench, with stoves and a sink incorporated, and a small pantry existed. Unlike in the previous cases, the kitchens generally had gas cookers. All rooms had electricity, which provided the opportunity to use an electric refrigerator, given sufficient space. In other words, the kitchen layout had not evolved significantly, but the amenities were greatly improved. The opening to the back façade via the balcony increased the recognition of a fundamental space in the home. In other words, when the kitchen was valued in the dwelling, even if it was social housing, it was a differentiated, clearly defined space.

6. End of the 1950s: bases for the laboratory kitchen in the 1960s

The economic, technological, and cultural bases were established at the end of the 1950s, which would enable the idea of a laboratory kitchen to become a real proposal in the 1960s in terms of construction and user preference. The recession was nearing an end, and international political-strategic needs, the renewal of Europe, and the start of tourism led to economic improvements that would eventually impact families. At a local level, service networks and services began to be a reality for the entire city. Other aspirational cultural references for behavior and eating habits began to emerge.

This period was an inflection point. As described below, in the 1940s and much of the 1950s, only the wealthy had access to kitchens that were fairly well-equipped and organized (although the space was still not highly valued). At the end of the 1950s, the bases were established for the fully equipped laboratory kitchen to become something that a substantial proportion of the city's population wanted and could obtain in the 1960s.

In the exclusive dwellings of the 1940s, such as those by F. Mitjans in Turó Park, the kitchen was still linked to servants' quarters that occupied the central bay in buildings with two stairways, as already noted for the 1930s, namely, the main and the servants' stairways. In these dwellings, zones for night and day were clearly separated. The daytime zone contained the living room and the dining room, which was directly connected to the butler's pantry adjacent to the kitchen. Some kitchens contained built-in furniture and a certain degree of functional organization (Figure 18). One of the buildings had a detailed plan of the kitchen and the butler's pantry (Figure 19). In this case, the kitchen contained high and low cupboards that were still not typical in these types of dwellings, which was why they needed to be detailed in the plan. The kitchens were equipped with both coal and gas stoves next to each other. This condition illustrated that the confidence in using gas remained low; consequently, the kitchen range continued to be used.

In the same period, Pere Benavent de Barberà created unique residential buildings. They followed the pattern of two accesses, namely, a main linked to the entrance hall and the main living quarters and a subsidiary one used by domestic servants and associated with the kitchen and the servants' quarters. For the first time, the refrigerator's position was specified, within the butler's pantry. The definition of the dwelling's amenities in Benavent's plans

[14]The first and fourth phases were constructed between 1959 and 1961 and were designed by Pedro López Iñigo, Xavier Subias Fages, and Guillermo Giráldez Dávila. The architects of the second phase were José Puig Torné and José Miguel Serra Dalmases. Those of the third and fifth were L.G. Borbón Fernández and E. Giralt Ortet. Finally, the architect of the sixth phase was Pedro López Iñigo, who was then the head architect of the Barcelona Municipal Housing Trust (PMHB).

[15]This project was headed by the architects Josep Soteras Mauri, Carlos Marqués Maristany, and Antonio Pineda Gualba.

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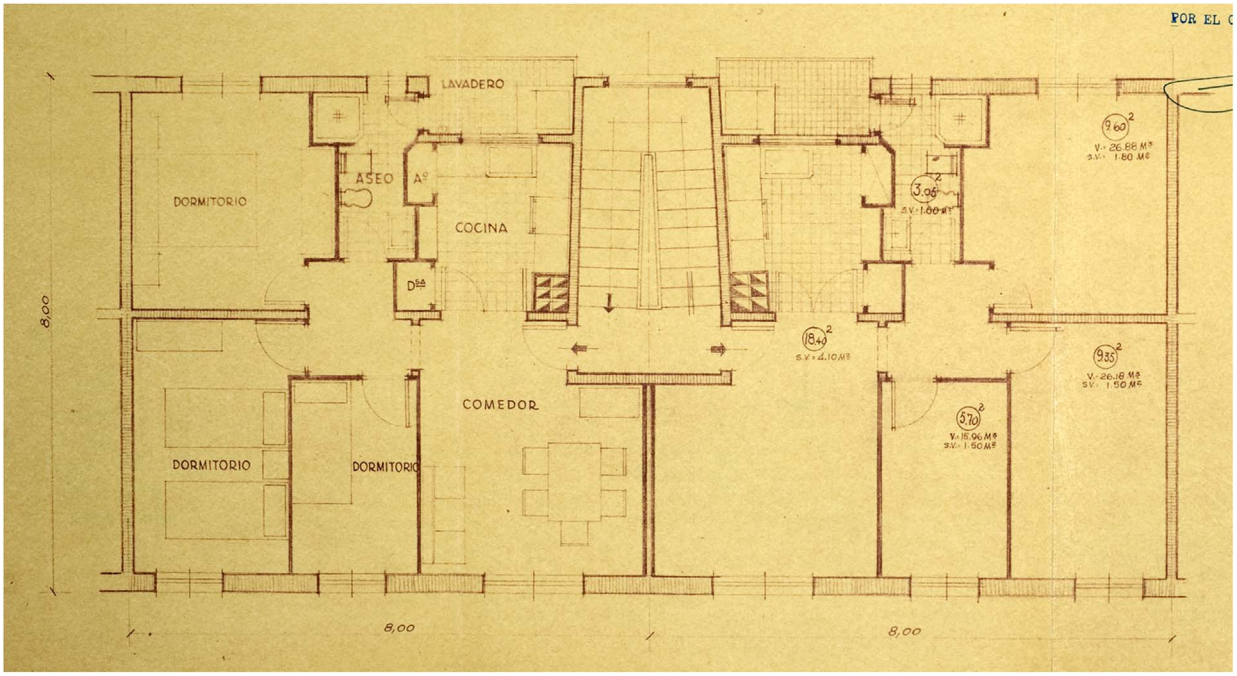

Figure 17 Ground plan of houses in the neighborhood of the Houses of the Eucharistic Congress of Barcelona, 1957. Josep Soteras Mauri, architect. Source: Arxiu Municipal Contemporani de Barcelona.

revealed sensitivity to the characteristics of the house and the need for efficient functioning, which was rare at the time. This attention to the house and its functioning was explained by Benavent (1944) himself in his essay *Brisas de alegria y honor* ("Breezes of happiness and honor") as *el sentido professional de la vida* ("the professional meaning of life"). The piece was written from the gender perspective of the period, which is not acceptable today, but it did highlight Benavent's interest in the dwelling functionality.

In the book *Como debò construir* ("How I should build"), Benavent (1945) expressed his understanding of the kitchen space and the technical level and amenities in these types of dwellings. With reference to the kitchen, Benavent stated that it must have the right dimensions, and he showed a concern for the functionality of the space. He considered that the basic elements of the amenities included the cooking appliance, sink, shelving, and cupboards, and he described each element in detail. His detailed description of the kitchen range indicated that this was the most common type of cooking appliance. He provided precise technical instructions for the construction and proper operation of kitchen ranges and defined their types and characteristics. He also stated that "in modern times," gas cookers had been introduced, and he defined them as stoves that used the heat produced by gas combustion for lighting. He only specified how easy they were to put into place because they were installed by their own manufacturers. He also mentioned electric cookers, although he stated that they were rarely used. With respect to other elements of the kitchen, he gave precise instructions for the cooker hood, the types of kitchen workbenches, sinks, and cupboards for the kitchen, butler's pantry, and main pantry. He described the need for drainers for plates and glasses. In other words, Benavent provided precise instructions and reflected on certain concerns for good management of the space from the perspective of conventional architecture, but with an interest in unity that was closely associated with modernity.

However, in his middle-class buildings, such as those constructed in the Gràcia and Eixample neighborhoods, he did not introduce these norms. Instead, he maintained the organization of buildings among party walls that we observed in the previous period when we referred to the dwelling as a "product." The kitchen amenities in these dwellings were similar to those of houses built in the 1930s, which indicated that a fully equipped, functional kitchen was still unattainable for much of society, not only for economic and cultural reasons but also because service networks were incomplete and because the costs were too high for many family economies.

This situation began to change at the end of the 1950s. We were particularly interested in transformations in service networks. For the modernization of the kitchen to occur, gas, electricity, and water networks needed to be available to all. Before the war, gas appeared to be a real option for domestic consumption, particularly for cooking, heating, and hot water. However, its use was slowed down by the civil war and the immediate post-war period (Fàbregas, 2014). The strong recession meant that coal continued to play a fundamental role. In 1941, the supply of gas was precarious. Only 1000 households had subscribed to the service, a situation that did not change until 1951 when city gas began to recover, but only in wealthy areas in sectors that were already served by the network in the city. Gas only became an affordable form of energy for many people when the market for bottled gas emerged. In 1957, the state created Butano SA to market and distribute bottled gas. This initiative slowed down the expansion of city gas, which left Spain on the margin of what was happening in the rest of Europe. However, this initiative

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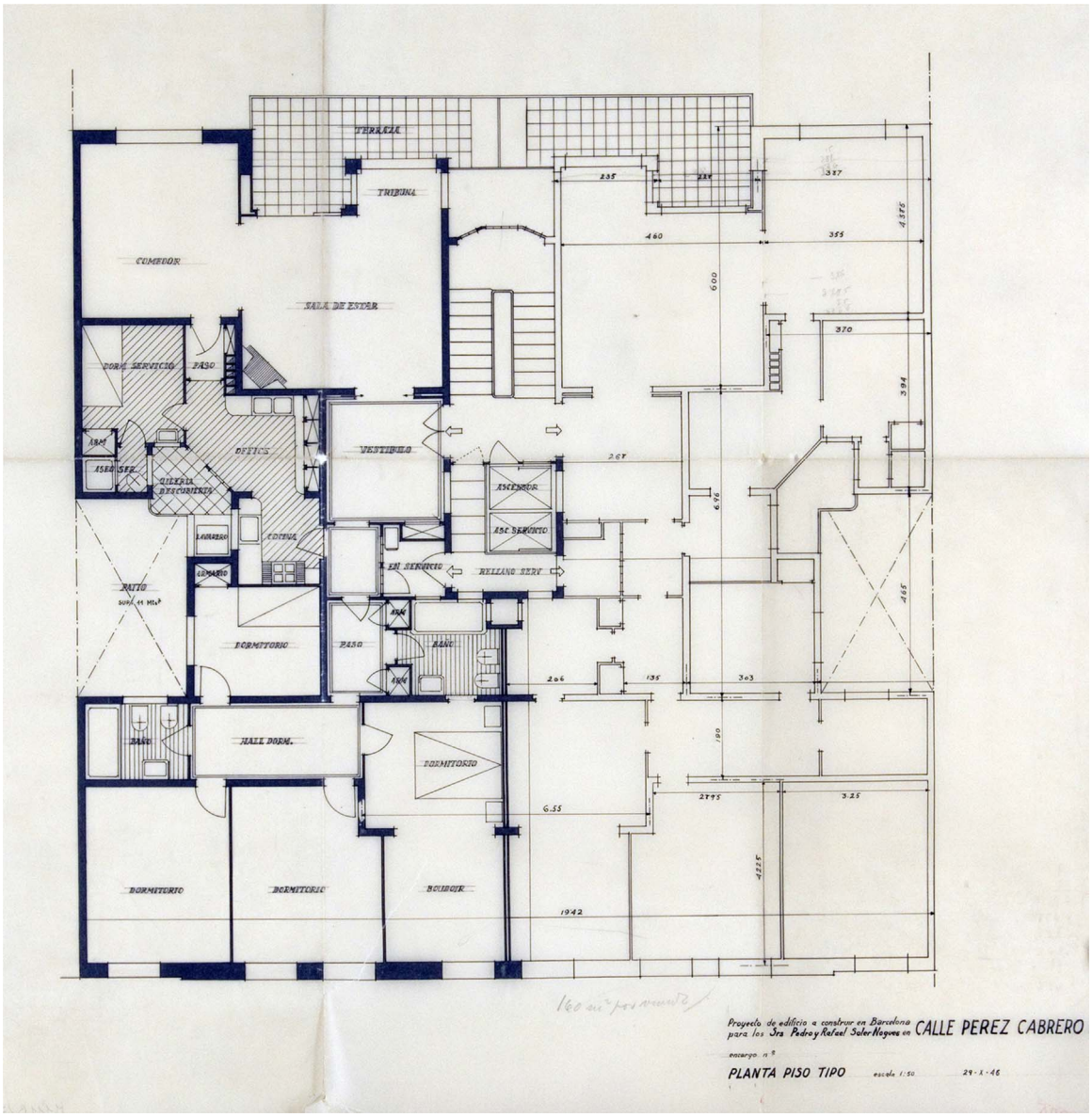

Figure 18 Carrer Pérez Cabrero 5, Barcelona, 1946. Francesc Mitjans, architect. Source: Arxiu Històric Col·legi d'Arquitectes de Catalunya.

meant that gas could reach a large number of homes.[16] Consequently, in the 1960s, many families could opt for gas cookers, which were much cleaner, tidier forms of cooking that fitted in with the line of white goods.

Domestic appliances were only feasible when electricity was available for more than lighting. Electricity activity recovered rapidly despite the setback of the war. A key milestone was the *Plan Nacional de Electricidad* (National Electricity Plan) of 1953, which began to regulate the electricity market and included a program for developing energy production, with public and private investments, forecasting a growth in demand in the order of 7% annually. Between 1950 and 1960, demand increased by 10% per year. However, the real increase occurred between 1960 and 1974 (Capel et al., 1994, p.189). Domestic appliances, particularly refrigerators, were allowed to be incorporated into homes. Prior to this time, refrigerators had mainly been powered by gas and were not found in many cases.

Before this period, the water supply had mainly come from groundwater. The volume of flow began to be considered insufficient after the war, considering the increase in population and consumption. The long drought from 1946 to 1953 revealed the need for alternative sources of supply from surface water. In fact, initiatives in this area were not consolidated until the end of the 1950s, and they were only "from the years of *developmentalism* [1967, with the full incorporation of water from the rivers Ter and Llobregat] that running water in sufficient quantities was gradually incorporated into all domestic spaces, and new practices that had initially been introduced eighty years earlier began to be established in all social levels" (Guàrdia et al., 2011,

[16] At the end of the 1960s, more than 6 million clients were needed to serve; consequently, gas had become a tangible reality in the city.

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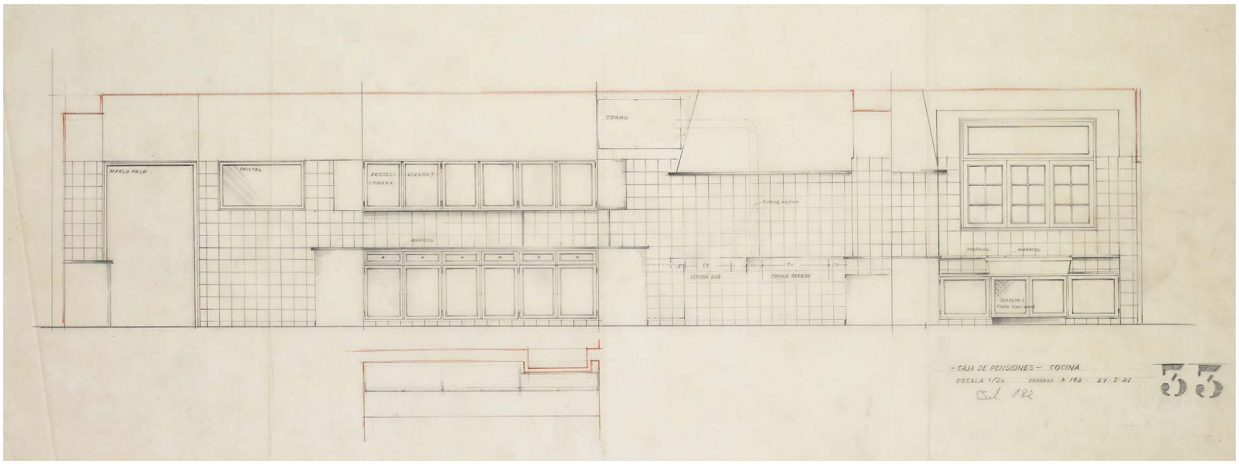

Figure 19 Detail of kitchen, Carrer Balmes 182, Barcelona, 1947. Francesc Mitjans, architect. Source: Arxiu Històric Col·legi d'Arquitectes de Catalunya (COAC).

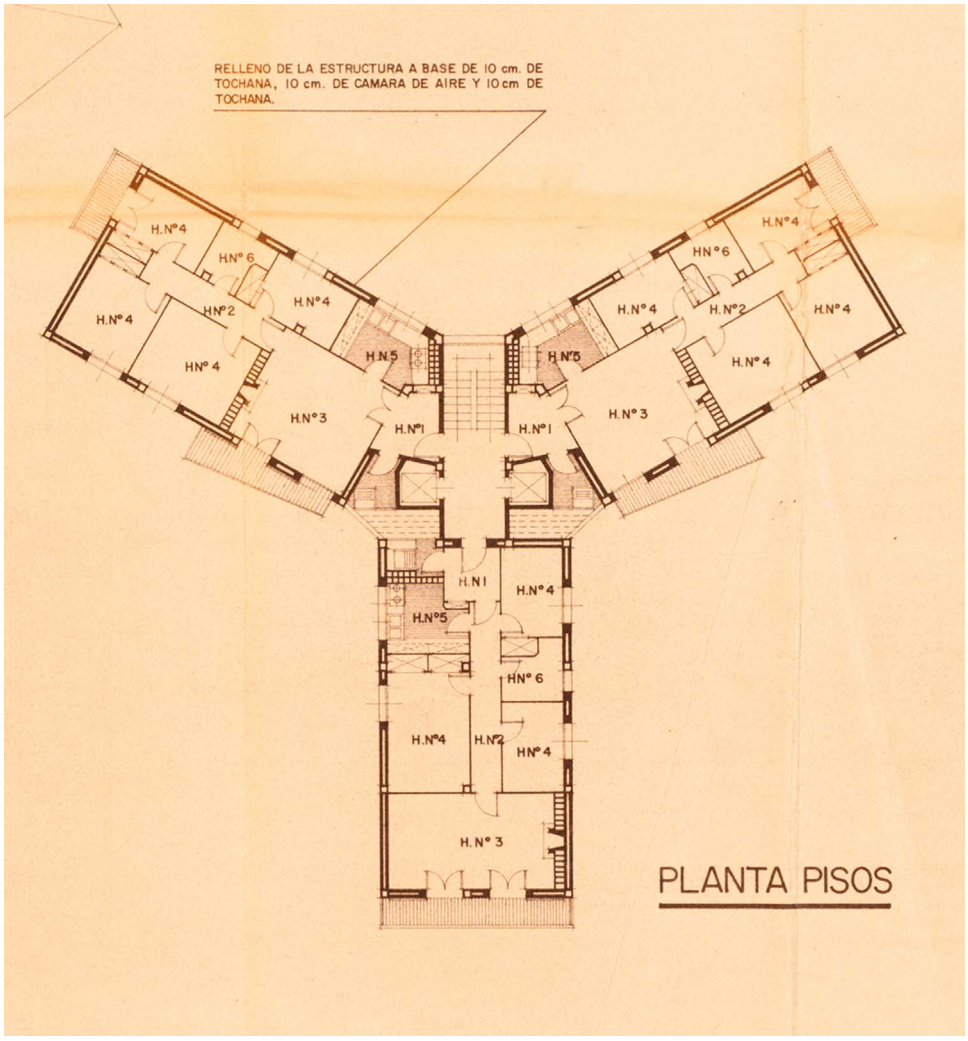

Figure 20 Ground plan of one of the buildings of the La Guineueta estate. 1962. Julio Chinchilla, architect. Source: Arxiu Municipal Contemporani de Barcelona.

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p.157). In other words, at the end of the 1950s, the bases were established to make the supply of electricity, gas (butane), and water a reality for the entire city, which in turn enabled access to the laboratory kitchen.

An example that illustrated the change in models was the Guineueta estate, a social housing development that was built in four phases between 1961 and 1963 on the outskirts of the city, in an area that was being urbanized. This estate comprised various types of independent blocks, some of which showed substantial changes in the definition of the kitchen space. One type comprised buildings with a star-shaped floor plan, inspired by Luciano Baldessari's design for the Hansaviertel neighborhood of Berlin for the Interbau of 1957. In these buildings, the kitchen laboratory was defined, with its full furnishing and integrated amenities (Figure 20). Another type of block had a square floor plan and was inspired by a building designed by Alvar Aalto also for the Hansaviertel neighborhood. In these blocks, the dining room was situated within the kitchen, with an opening to the exterior. The designer of this estate, Architect Julio Chinchilla, recognized the influences in the design report, and, with reference to the second type of block, stated that "the kitchen expands to form a dining room so that the room [living room] is free for its specific use."

In this period, we determined a kitchen that was completely resolved and fully furnished and a kitchen as a relevant, valued place where food was eaten and the ventilation and lighting conditions were good. These two approaches fully reflected one of the debates of modernity, namely, the kitchen laboratory or the kitchen as a place for living (Spechtenhauser, 2006).[17] However, this debate was irrelevant in Barcelona at this time because the laboratory kitchen was predominant. Built-in furniture, gas cookers, refrigerators, and other domestic appliances began to become a reality, and families aspired to this kitchen model as an icon of modernity. In many areas of Europe, the laboratory kitchen, which had been considered essential during the 1920s, began to become less desirable in the 1960s. However, in Barcelona, the middle and working classes aspired to this model. Apart from some isolated examples, several decades would have to pass before a live-in kitchen was proposed.

Thus, this study confirmed that the evolution of the kitchen and dining room in dwellings in Barcelona between the 1920s and 1950s was based on various influences and occurred at a different rate from that of modern European architecture. First, in urban dwellings in Barcelona, the kitchen had always been small and subsidiary (and remained so during the entire study period) and separated from the dining area. Second, in Barcelona, the kitchen integrated into the rest of the dwelling was not a solution associated with the middle and upper classes' idea of modernity but a strictly economical solution for social housing. Third, the incorporation of the laboratory kitchen did not become a reality until the 1950s, when the models of modernity were finally attained, and the service networks were available to make this possible.

Returning to the ideas that we presented at the beginning of this article, we can conclude that, in Barcelona, modernity did not lead to a reduction in the kitchen, the loss of the table and of a place to eat, in contrast to Clarisse's analysis. In the dwellings in this city, the kitchen had always been a place to which limited attention was paid outside of the dining area. Therefore, when the concepts of modernity arrived in the 1960s, qualities were not attributed, but functional benefits were ascribed.

[17]Spechtenhauser, p.36: Adolf Loos was a proponent of the pragmatic live-in kitchen solution. He spoke against ergonomic rationalization as he considered that kitchen work separated women from the family environment. At the start of the 1920s, M. Schütte-Lihotzky in Vienna also supported this concept. What made her change her mind? On the one hand, the reasons for the kitchen in Vienna were more practical than ideological because the idea was to take advantage of heat from the kitchen range. When gas emerged, the practical argument of heating disappeared because gas stoves did not provide sufficient heat. However, in Vienna, the idea of a shared space was strong and adapted to the conception at that time. By contrast, in Frankfurt, the goal was to create a modern space.

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